



10 February 2003

Ms. Bobbie Garcia
Senior Integrated Waste Management Specialist
California Integrated Waste Management Board
1001 'T' Street
Sacramento, California 95812

Subject: Response to Landfill Owners'/Operators' and Regulators' Comments
Task 2 1998-2001 Landfill Facility Data Inventory
Landfill Facility Compliance Study
Contract: IWM-C9047

Dear Ms. Garcia:

In accordance with our scope of services for the above-cited project, GeoSyntec Consultants Inc. (GeoSyntec) submitted to the California Integrated Waste Management Board (CIWMB) on 4 February 2003, the final comprehensive, cross-media inventory of 224 California Municipal Solid Waste (MSW) landfills. The inventory covers the time period from 1 January 1998 through 31 December 2001. The 224 landfills included in the inventory are those that have accepted waste since 9 October 1993. The inventory also contains information on 13 "pre-1993" California MSW landfills (those that closed before 1993) that will be used in Task 4 of the study.

The final inventory is the result of the collective efforts of GeoSyntec, the CIWMB, the State Water Resources Control Board (SWRCB), the California Air Resources Board (CARB), regional water quality control boards (RWQCB), local enforcement agencies (LEA), air pollution control districts (APCD) air quality management districts (AQMD), and landfill owners/operators throughout California. Initial information was gathered by GeoSyntec from public documents made available during file reviews at each RWQCB, LEA, and AQMD/APCD office from September 2000 through May 2001. In accordance with the

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approved scope of work and budget, the time allotted to collect all information was limited to approximately 7 hours (including travel) per landfill to be divided between each RWQCB, LEA, and AQMD/APCD office. GeoSyntec submitted the draft inventory to the CIWMB in September 2001.

Recognizing the limitations of the relatively brief file review period, the CIWMB forwarded the data to all respective landfill owners and/or operators, requesting verification, comments and corrections regarding each site (First Comment Period).

First Comment Period

During the first comment period, the owners/operators were requested to submit their comments and corrections to the CIWMB by 26 November 2001. A total of 111 sets of comments were received by the CIWMB during this first period. These comments were then forwarded to GeoSyntec via e-mail for possible incorporation into the inventory of MSW landfills. The CIWMB continued to receive comments from owners/operators for four months following the 26 November 2001 deadline, and forwarded them to GeoSyntec. GeoSyntec reviewed the owner/operator comments and incorporated them, as appropriate, into the inventory.

GeoSyntec recognized that even with the addition of owner/operator comments, there would still be some gaps in the data. In late 2001, GeoSyntec asked each RWQCB to provide the groundwater monitoring status for landfills within their jurisdiction. By the end of January 2002, each RWQCB had provided this information. In some cases, the monitoring status provided by the RWQCB conflicted with information provided by owners/operators. The CIWMB then contacted the affected owners/operators to provide them with an opportunity to comment on the changes.

After resolution of the groundwater monitoring status (detailed below, under Number 6), GeoSyntec submitted a second draft of the inventory to the CIWMB on 14 May 2002.

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As GeoSyntec reviewed the inventory in preparation for Task 3 of the study (to evaluate whether correlations could be drawn between various Task 2 data categories and landfill performance), it became evident that even with the addition of owner/operator comments, there were still some gaps in the data. If these gaps could be filled, the confidence level in the Task 3 analysis could be improved. As a result, CIWMB staff reviewed their in-house library of landfill documents and worked with the SWRCB to fill these gaps. CIWMB staff also used the CIWMB's Solid Waste Information System (SWIS) database to obtain LEA inspection information and enforcement actions, which were taken directly from LEA inspection reports and submittals.

Once the data gaps were filled, the CIWMB forwarded the draft inventory to each landfill owner/operator, RWQCB, LEA, and AQMD/APCD for comment (Second Comment Period).

Second Comment Period

Each party was requested to submit their comments and corrections to the CIWMB by 12 November 2002. A total of 126 sets of comments were received by the CIWMB during this second comment period. These comments were then forwarded to GeoSyntec via mail or e-mail for possible incorporation into the inventory. The CIWMB continued to receive comments from owners/operators, and regulators for two months following the 12 November 2002 deadline, and forwarded them to GeoSyntec. GeoSyntec reviewed the owner/operator and regulator comments and incorporated them, as appropriate, into the inventory. The final inventory was submitted to the CIWMB on 4 February 2003.

Comment Types

During both comment periods, the comments on the draft inventory varied greatly in content and in length. They ranged from a single sentence e-mail to hundreds of pages of

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mark-ups. The vast majority of inventory comments can be divided into the following 14 categories:

- 1 - Update reference list;
- 2 - Include more recent permits, reports, or figures;
- 3 - Remove outdated permits, reports, and performance information;
- 4 - Remove or show as resolved violations and other compliance issues;
- 5 - Change geologic materials;
- 6 - Change groundwater monitoring status;
- 7 - Change waste fill method;
- 8 - Change permitted landfill areas and volumes;
- 9 - Update the monitoring systems, protection systems, and waste types;
- 10 - Address comments about permitted maximum tons per day, days of operation, and tons disposed last year;
- 11 - Change social settings;
- 12 - Correct grammatical errors;
13. - Correct LEA inspection information; and
- 14 - Comments that could not be addressed.

In general, owner/operator, and regulator comments were very helpful and updated and enhanced the information presented in the inventory. Most of the corrections, comments, and additions were reasonable and appropriate, and were, therefore, incorporated into the inventory.

Since the number of individual comments was in the thousands, it is not practical to describe in this letter each change made to the inventory in response to these comments. However, the protocol used by GeoSyntec to address each comment was the same for each category and is described below.



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1. Update reference list

Often the commenters included new references (permits, closure plans, etc.). Some individuals included copies of these documents, but most did not. If the reference was provided, GeoSyntec reviewed it, incorporated relevant information into the inventory, and included the document in the reference section in the same manner used during the initial file review. If the new reference was not provided, but was cited by the commenter, the relevant information was incorporated into the inventory, and the new reference was indicated using the following notation: Title, Date, Author, “as identified by John Smith, 30 November 2001.” This notation indicates that the new reference was identified by the commenter, but was not reviewed by GeoSyntec personnel. If changes to any inventory field were noted and a complete new reference was given, a new entry was included in the references section as “Comments on the draft inventory provided by John Smith, 30 November 2001.” New references were not included for very basic changes to the inventory, such as the addition of a site zip code, latitude/longitude, change of operator name, or for grammatical corrections.

2. Include more recent permits, reports, or figures

The most common corrections to the inventory involved the addition of permits, reports, or figures that were either i) not reviewed during the data collection at the regulators’ offices, or ii) issued after the initial data collection was completed. Some of the new permits, reports and figures were provided by commenters in electronic format. To be consistent with the draft inventory, these new electronic files were then included in the inventory with hyperlinks in the appropriate sections. If a paper copy of a permit or figure was provided, the item was scanned and the electronic files were then included in the inventory with hyperlinks in the appropriate sections. In cases where the commenter described new permits and reports, but did not provide either paper or electronic copies of the permits, the protocol described above, under Number 1 was used; (i.e., with a reference indicating that the permit or report exists, but was not reviewed in preparation of the inventory).

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3. Remove outdated permits, reports, and performance information

As discussed with the CIWMB during the preparation of the draft inventory in Summer 2000, the intent of this effort was to provide a “snapshot in time” of the current status of California landfills. At that time, it was agreed that GeoSyntec would examine performance and compliance information for the past 2 to 3 years. GeoSyntec reviewed files at the various regulatory offices between September 2000 and May 2001. Regardless of the date of file review, the earliest date for considering information relevant was 1 January 1998. Some commenters reviewed the draft inventory in 2002 and requested inclusion of only 2001 and 2002 information and deletion of older information. To be consistent with a “snapshot in time” concept and in keeping with the time frame established at the inception of the data collection effort, relevant information for the time period of 1 January 1998 through 31 December 2001 was retained in the inventory.

Many owners/operators of closed landfills requested the removal of their Solid Waste Facility Permit (SWFP) to indicate that they no longer accept waste. However, Section 21870(e) of Title 27 as amended in February 2003 keeps the existing SWFP in place and deems to incorporate by reference, as terms and conditions of the SWFP, the provisions of the final or partial final closure and postclosure maintenance plans and all applicable standards set forth in Chapter 3. Therefore, GeoSyntec has retained the SWFPs of closed landfills in the inventory. To identify closed sites in the inventory, GeoSyntec has included a site status entry under the “General Facility Information” heading, and a text description of the closure along with a description of the cover under the “Environmental Systems/Waste Types” heading.

Many owners/operators also requested the removal of old Waste Discharge Requirements (WDRs). In some cases, the draft inventory contains up to four WDRs per landfill issued at different times. Generally, the newly issued WDRs state whether they amend or rescind previous WDRs. This allows the reader to evaluate which permit conditions still

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apply. Some of the outdated WDRs still contain relevant information. For this reason, outdated WDRs were not removed from the inventory.

Some of the owners/operators requested the removal of specific water quality monitoring reports that were dated prior to 1998. In revising the draft inventory, and with CIWMB concurrence, GeoSyntec removed all of the specific monitoring information related to water quality because of inconsistencies with the types of data gathered and replaced them with RWQCB groundwater monitoring status.

4. Remove or show as resolved violations and other compliance issues

Some of the owners/operators requested the removal of violations and other compliance information dated prior to 1998. Compliance issues dating prior to 1998 were removed from the inventory to be consistent with the “snapshot in time” concept. Most of the owners/operators indicated that many of the compliance issues had been resolved and some provided detailed information regarding the resolution. References to these resolutions were incorporated, as appropriate, in the inventory. When an owner/operator indicated that a compliance issue was resolved, but did not provide documentation or an explanation, the status of the compliance issue was assigned a “resolved” status and the commenter was cited as the reference.

5. Change geologic materials

The inventory contains a field describing the geologic material underlying the landfill. To aid in future analysis of the data, GeoSyntec provided 4 categories of materials in the draft inventory: Silts/Clays, Sands and/or Gravels, Igneous Rock, and Sedimentary Rock. Recognizing that these basic categories don’t encompass every material type, a “Notes” section is included for a more comprehensive description of the underlying geologic materials.

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Several commenters asked to change the category field to become more descriptive of their site. As an example, someone might request to change the “Silts/Clays” entry to “alluvial silty clay with occasional sand lenses.” In these cases, the original entry was left unchanged. The purpose of this category is to facilitate screening of the inventory based upon the major characteristics of the underlying geologic material. Therefore, it is necessary to limit the geologic categorization to a few major categorical types that represent the dominant characteristics of the underlying geologic material. However, comments regarding this field were incorporated in the “Notes” field. Furthermore, if the commenter indicated that the major categorization of the geologic setting was incorrect, the selected category (i.e., Silt/Clay, Sand and/or Gravel, Igneous Rock or Sedimentary Rock) was then updated, as appropriate, using the information provided by the commenter.

6. Change groundwater monitoring status

Some of the owners/operators updated the groundwater monitoring status. As stated above, under “First Comment Period,” the monitoring status for each landfill was also concurrently reviewed and updated by the RWQCBs. In 118 cases, the status provided by the RWQCBs contradicted the status shown in the inventory that included the owner/operator comments (although in many cases, the RWQCB simply provided the groundwater monitoring status where it had previously been left blank). The CIWMB contacted the owners/operators of these 118 sites, informed them of the RWQCB-cited status, and solicited additional comments from the owners/operators on the updated status. Responses were received from owners/operators for 63 of these sites. Most of the owners/operators that responded confirmed the status provided by the RWQCB and the inventory was updated accordingly. For 12 sites, the owners/operators disagreed with the status as described by the RWQCB. In these cases, either the status provided by the owner/operator was more onerous than that provided by the RWQCB (i.e., the RWQCB said Detection Monitoring while the owner said Evaluation Monitoring) or it appeared that the RWQCB status reflected a pending, but not yet official change in status. In these cases, the inventory was updated to reflect the information

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provided by the owners/operators. For sites where the owner/operator did not respond, the inventory was updated to reflect the RWQCB information.

7. Change waste fill method

An entry on the method of waste fill was added to the inventory under the “General Facility Information” heading after the initial file reviews were performed by GeoSyntec. Many of the commenters made corrections to the waste fill method type. These corrections were incorporated into the inventory, even if a reference was not provided.

8. Change permitted landfill areas and volumes

Many of the permitted areas, permitted volumes, estimated remaining capacities, and yearly tonnages were changed by the owners/operators, or regulators. The updated information was associated either with the issuance of a new SWFP or based on more current information provided by the commenter. GeoSyntec updated these quantities accordingly.

9. Update the monitoring systems, protection systems, and waste types

Many commenters made corrections to the monitoring systems, protection systems, and waste types listed under the “Environmental Systems/Waste Types” heading. Most of the comments updated the existing system descriptions listed in the inventory. For example, more monitoring wells may have been installed since the file reviews. Sometimes, the commenter provided a more detailed description of the systems and waste types. Information was added to, or removed from, the inventory as indicated by the comments.

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10. Address comments about permitted maximum tons per day and days of operation, and tons disposed last year

Some commenters requested that the “permitted maximum tons per day” and the “permitted days of operation” entries be left blank to indicate that a landfill is closed. These data were incorporated in the inventory by GeoSyntec to provide a general idea of the size and waste flow (either current or historic) of a particular landfill, county, or region relative to other areas in the state. Because this information will be used as part of future analyses, it was retained in the inventory even for closed landfills. However, these comments have been addressed, in part, by providing the additional information on closed site status as discussed above, under Number 3.

Many owners/operators had questions regarding the “tons disposed last year” entry located under the “General Facility Information” heading. Some owners/operators interpreted this field to mean the tonnage disposed during the final year of operation for their closed landfill. The intent of this field was to record the total waste disposal tonnage during a recent year to get an idea of the relative waste flow throughout the state. The time frame selected to represent the “recent” year depended on the availability of weight records at the LEA office. For closed sites, the value recorded was typically zero. To reduce confusion concerning this field, it has been renamed the “recent yearly disposal tonnage.” The tonnage is then followed by the year for which it applies.

11. Correct social settings

A few of the owners/operators and regulators requested corrections to the type of social setting listed for their landfills. Each landfill was given one of the three following social setting types using objective evaluation criteria: urban, suburban, or rural. As described in the “Explanation of Data Fields,” the social setting was selected by using census tract information from the 2000 census. Urban areas were defined as having over 50,000 people; suburban as

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having between 25,000 and 50,000 people; and rural areas as having less than 25,000 people or not defined as urban or suburban by the 2000 census tracts. Because this designation is objective, the social settings were not modified by the comments.

12. Correct grammatical errors

Grammatical corrections were made unconditionally throughout the inventory.

13. Correct LEA inspection information

Some commenters provided feedback regarding the LEA inspection results. To address these comments and to help ensure that the information included in the inventory was complete for purposes of the Task 3 statistical analysis on landfill performance, CIWMB staff updated all LEA inspection results records in the inventory (7834 in total) by extracting data from the SWIS III database maintained by the CIWMB. The data in SWIS is collected directly from LEA inspection reports that are submitted to the CIWMB and entered by CIWMB staff into the SWIS database.

14. Comments that could not be addressed

A few of the comments were too vague and/or lacking in enough detail to be addressed in the revised inventory. For instance, in three cases the owner/operator stated that the information contained within the draft inventory was inaccurate, but provided no indication of what they were and where they were located in the inventory, so GeoSyntec was unable to address their comments. Additionally, some regulators pointed out records in the inventory that lacked detailed descriptions, but did not provide the necessary information for GeoSyntec to add to the inventory. Unfortunately, without specific information from the commenter, no corrections could be made to address these comments.



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Should you have any questions, please contact us.

Sincerely,



Michael J. Minch, P.E., G.E.

Project Engineer



for Edward Kavazanjian, Jr., Ph.D., P.E., G.E.

Principal

